

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

MESSAGE FROM THE ADMINISTRATOR

NASA's Fiscal Year 2013 budget moves the Agency forward strongly on a path that will maintain America's preeminence in space exploration. Under President Obama's leadership, NASA and the Nation are embarking upon an ambitious exploration program that will build on new technologies as well as proven capabilities as we expand our reach out into the solar system. Even in these tough fiscal times, the FY 2013 budget seeks \$17.7 billion for NASA to continue implementing all major elements of the NASA Authorization Act of 2010, thereby laying the foundation for remarkable discoveries here on Earth and deep in space.

While reaching for new heights in space, we're creating new jobs right here on Earth, especially for the next generation of American scientists and engineers, by supporting cutting edge aeronautics and space technology innovations, and research and development that will fuel the Nation's economy for years to come. Our activities stimulate innovation and focus on the highest-skilled, highest-educated workers; the most advanced transportation systems in aviation and space; high tech communication; and a strong commitment to research and technology that has paid off for American taxpayers since the inception of the space program.

The proposed budget allows NASA to fully implement a National Laboratory and exploration platform in low Earth orbit, the International Space Station (ISS), which unites nations in a common pursuit of knowledge and experience to enable future exploration; and it enables partnership with commercial entities to provide crew services to low Earth orbit. The budget also supports developing a heavy lift rocket and crew capsule, with an un-crewed test flight planned for as early as 2017 and a crewed flight as early as 2021. In addition, it enables NASA to develop the James Webb Space Telescope with the goal of launch in 2018. As the successor to Hubble Space Telescope, James Webb Space Telescope will again revolutionize our understanding of the universe.

After an unparalleled in-space construction process, we now have a unique orbiting outpost, the ISS. We will use it to improve life on Earth and help make the next great leaps in scientific discovery and exploration. With ISS now capable of operating at full capacity as a unique laboratory, we will enhance its usage by others in government, industry, and academia.

At the same time, NASA is partnering with the U.S. commercial space industry to enable safe, reliable and cost-effective access to low Earth orbit for crew and cargo, and to reduce American reliance on foreign services. In calendar year 2012, we will see the first commercial cargo flights to the station, demonstrating the innovation and capabilities of our industry partners and eventually helping to ease our reliance on Russian transport of astronauts. We will continue to work with partners both large and small to develop end-to-end systems for transporting crew and cargo to orbit and the supporting technologies for this work. Opening this new segment of the economy will support good jobs and provide long-term economic benefits.

Among our top priorities in 2013 is to make steady and tangible progress in the next great chapter of exploration. We will continue work on the next generation, deep space crew capsule and heavy-lift rocket and meet major milestones in both areas. Using existing hardware and capabilities to the extent feasible to conduct early tests, the Agency will make faster progress toward a system that ultimately will have greater capability than ever before to carry humans and cargo to deep space.

Our science missions have led the world in amazing discoveries, and in 2013 we will build on that strong and balanced portfolio. Continuing and newly operational missions will return data that will facilitate

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

MESSAGE FROM THE ADMINISTRATOR

scientific discovery for years to come and new missions will chart our next frontiers. Another priority for the Agency is successful execution of the James Webb Space Telescope, which we continue to develop and test leading to its planned launch in 2018. With James Webb Space Telescope and other ongoing projects, we will reach farther into our solar system, reveal unknown aspects of the universe and provide critical data about our home planet. We are developing an integrated strategy to ensure that the next steps for the robotic Mars Exploration program will support long-term human exploration goals as well as science and meet the President's challenge to send humans to Mars in the mid-2030s. The Mars Science Laboratory will reach the Red Planet in August, renewing the vast public interest in such scientific exploration and making discoveries about our neighbor's potential habitability both now and in the past.

To improve our Nation's capabilities in the skies and in space and enhance life for millions here on Earth, we are driving advances in new aviation and space technologies like laser communications and zero-gravity propellant transfer. These advances will seed innovation that will support economic vitality and help create new jobs and expanded opportunities for a skilled workforce.

NASA can provide hands-on experience and inspiration as few other agencies can. To foster the U.S. workforce, NASA's education programs will focus on demonstrable results and capitalize on the Agency's ability to inspire students and educators through unique missions and the big challenges that help today's young people envision a future in science, technology, engineering, and mathematics.

NASA's 2013 budget implements President Obama's vision for an American space program with much greater capabilities that it has today and the flexibility and determination to reach new destinations with human and robotic explorers. Our plan sets us on a path as a nation to achieve even greater goals and to make life better around the world as we strive to meet these grand challenges.

A handwritten signature in black ink, appearing to read 'C. Bolden', with a long, sweeping horizontal line extending to the right.

Charles F. Bolden, Jr.
NASA Administrator

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

BUDGET HIGHLIGHTS

NASA and the Nation are embarking upon an ambitious program of space exploration that will build on new technologies as well as proven capabilities as we expand our reach out into the Solar System.

Despite tough economic times, the FY 2013 budget request continues to implement the space exploration program agreed to by the President and a bipartisan majority in Congress, laying the foundation for remarkable discoveries here on Earth and deep in space, and will lead to myriad benefits for U.S. citizens and people around the world.

The FY 2013 budget request continues to develop innovative science missions that will reach farther into our solar system, reveal unknown aspects of our universe and provide critical data about our home planet. Data from NASA's Earth observing satellites is essential in understanding climate change, predicting severe weather events, and responding to global disasters. In addition, NASA is taking a fresh look at robotic Mars exploration to develop a more integrated approach that advances scientific and human exploration objectives that are consistent with available budget resources and priorities in the Planetary Science decadal survey. NASA remains interested in working with ESA and other international partners to identify opportunities to cooperate in Mars exploration consistent with the budgets available to the agencies. Moreover, Mars exploration remains an important component of NASA's planetary exploration efforts. The missions currently operating on the surface and orbiting Mars, the 2011 Mars Science Laboratory now on its way, and 2013 Mars Atmosphere and Volatile Evolution (MAVEN), which is well into development, will be providing us with many years of data to analyze. This information is providing fundamental knowledge that enables us to understand our nearest planetary neighbor and plan the requirements for human visits in future years.

The proposed budget allows NASA to fully implement a national laboratory and exploration platform in space, ISS, which unites nations in a common pursuit of knowledge and experience to enable future exploration. The budget also supports developing a heavy lift rocket and crew capsule, with an un-crewed test flight planned for as early as 2017 and a crewed flight as early as 2021. In addition, it enables NASA to develop the James Webb Space Telescope (JWST) with the goal of launch in 2018. As the successor to Hubble Space Telescope, JWST will again revolutionize our understanding of the universe.

The FY 2013 budget provides the funds necessary to end U.S. reliance on Russian vehicles for crew transportation to ISS by 2017, leveraging investments being made by multiple domestic companies across the country to develop crew transportation systems. The budget also provides funds to purchase cargo transportation to the ISS from commercial providers, following through on the promise of the past Commercial Orbital Transportation Services (COTS) program. The capabilities resulting from the former COTS and current Commercial Crew programs will provide a commercial market for access to space that academia, research organizations, and corporations will use to develop new technologies and products, and result in the creation of high-technology jobs across many sectors of the economy.

For NASA, this investment will ultimately enable domestic suppliers of safe, reliable, and cost-effective access to low Earth orbit for crew and cargo and to lessen American reliance on foreign services. Through these partnerships, NASA invests in research and technology that will also enable long-term deep space exploration to destinations including asteroids and Mars and its environs.

NASA is pursuing a portfolio of research and technology investments that will increase the Nation's capability to operate in space and enable long-term deep space exploration. These investments, which will increase the capability and decrease the cost of NASA, commercial, and other government space

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

BUDGET HIGHLIGHTS

activities, include numerous high payoff, high-risk technology projects that industry cannot tackle today. NASA is driving advances in new aviation and space technologies like improved atomic clocks, laser communications and zero-gravity propellant transfer, seeding innovation to expand our capabilities in the skies and in space, to support economic vitality, and to help create new jobs and expanded opportunities for a skilled workforce.

NASA strives for sound budgeting and scheduling for all missions and programs since realistic planning is the foundation on which success is built. Schedules and budgets must include a complete cost analysis from concept design to the end of the life cycle. To the greatest extent possible, development risks must be identified, planning impacts assessed, and resources to mitigate the risks and impacts must be available when they are needed. Aggressive management controls and oversight, a full understanding of costs and benefits, and improved coordination and communication at all support levels will lessen risks and improve the likelihood of mission success within cost and funding allowances. Increasing the Agency's accountability and transparency will help reassure the public that NASA remains a good steward of taxpayer dollars.

The FY 2013 budget request enables NASA to maintain America's leadership in space. It transitions the Agency from planning to implementing human exploration activities. It allows us to build, to share and discover.

The President's 2013 Budget Request provides \$17.7 billion to support NASA in its mission to drive advances in science, technology, and exploration to enhance knowledge, education, innovation, economic vitality, and stewardship of the Earth. If enacted, NASA would make key investments in programs that will ensure American leadership in space science and exploration, support the development of new space capabilities, make air travel safer and more affordable, and answer important scientific questions about Earth, the solar system, and the universe.

SCIENCE IS ANSWERING ENDURING QUESTIONS IN, FROM, AND ABOUT SPACE

NASA's Science account funds the development of innovative satellite missions and instruments to enable scientists to conduct research to understand the Earth, the Sun, and the planetary bodies in our solar system, and to unravel the mysteries of the universe. These discoveries continue to inspire the next generation of scientists, engineers and explorers. The FY 2013 budget request for Science is \$4,911.2 million.

In August 2012, after a journey of more than six months, the most capable rover ever envisioned for another planet is scheduled to land on Mars. The Mars Science Laboratory rover, called *Curiosity*, is targeted at a precise location with a suite of highly capable science instruments designed to determine whether Mars is or has ever been an environment able to support life. It will do so by chemically analyzing samples collected in various ways, including scooping up regolith, drilling into rocks and vaporizing some with lasers, and sniffing the atmosphere. At the end of 2013, after completing final integration and test, the 2013 MAVEN mission will be shipped to the launch site. In addition, as discussed above, in FY 2013, NASA will implement a lower-cost approach to Mars exploration that will better integrate scientific objectives with long-term human exploration goals.

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

BUDGET HIGHLIGHTS

Activities on other missions scheduled for launch in this decade also continue. For example, the Lunar Atmosphere and Dust Environment Explorer (LADEE) is scheduled for launch to the Moon late in 2013, and will characterize the lunar atmosphere and dust environment. The FY 2013 budget also supports formulation of the Origins-Spectral Interpretation-Resource Identification-Security-Regolith Explorer (OSIRIS-REx), which will return and analyze asteroid material and pave the way for human exploration of an asteroid. The Agency will continue development of JWST, the successor to the Hubble Space Telescope, with completion of instrument deliveries and significant progress on the sunshield, main structural element and the optical telescope. FY 2013 will see the commissioning and early operation of the Radiation Belt Storm Probes to be launched this September. The FY 2013 budget will fund continued development of the Magnetospheric MultiScale (MMS) mission and advance the formulation of Solar Probe-Plus. The Landsat Data Continuity Mission (LDCM) is scheduled to launch in January 2013 and will provide global multispectral data of the Earth's surface for use by agriculture, education, business, government and science. Data from the entire constellation of NASA's Earth observing satellites will continue to advance the Nation's capability to predict changes in climate, weather and natural hazards and inform decision-making to enhance our economic and environmental security.

AERONAUTICS IMPROVES AIR TRAVEL FOR ALL

NASA's investment in Aeronautics advances the safety, reliability, capacity, and efficiency of air travel. The FY 2013 budget request for Aeronautics is \$551.5 million.

Research in aeronautics disciplines improves the safety, performance and future capability of the aircraft industry. The Agency supports development of new technologies, as well as the most effective application of those technologies, enabling increases in capacity while reducing environmental pollution and noise emissions. NASA's research in revolutionary aeronautics concepts may lead to breakthroughs that could one day change the face of air transportation. In FY 2013, NASA will collaborate with the Federal Aviation Administration on their certification requirements related to engine icing. NASA's research in atmospheric conditions will help to reduce the harmful impact of this icing condition. The Agency will also test an alternate routing tool that will help save time, fuel, and distance traveled through severe weather conditions. Green technologies continue to be an Agency aviation priority, and a new variable-speed transmission test facility at the Glenn Research Center will allow engineers to test rotorcraft for fuel efficiencies, saving potentially 25 percent of energy normally consumed.

SPACE TECHNOLOGY EXPANDS THE NATION'S ABILITY TO OPERATE IN SPACE

Space Technology will be building, testing and flying the technologies required for the space missions of tomorrow. The FY 2013 budget request for Space Technology is \$699.0 million.

American technological leadership is vital to National security, economic prosperity, and global position. The leadership position of the U.S. today is due in part to the technological investments made in earlier decades, when engineers, scientists and elected officials established basic and applied research and engineering facilities, effective oversight organizations, and robust competitively funded programs. That focus spurred economic growth, and led to the creation of new industries, products and services that continue to yield lasting benefits. NASA prepares for the future by generating new technologies for use by NASA, other Government agencies, and U.S. industry. In addition, Space Technology pursues

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

BUDGET HIGHLIGHTS

advancements in areas such as propulsion; entry, descent, and landing systems; optical communications; space power systems; radiation protection; and cryogenic fluid handling because they are essential for human exploration beyond low Earth orbit.

In FY 2013, NASA will move the development and testing of entry, descent, and landing systems from the Aeronautics account to Space Technology, better leveraging the Agency-wide knowledge base in these research areas. Space Technology will also advance high-priority, high-visibility technical areas through testing and launch milestones of a laser communications relay demonstration, a deep space atomic clock, and activities related to storage and transfer of cryogenic propellants, among others. NASA will continue to stimulate a U.S. economic powerhouse, the small business sector, through the competitive Small Business Innovative Research and Small Business Technology Transfer programs.

EXPANDING HUMAN EXPLORATION OF THE SOLAR SYSTEM

Exploration ensures that the United States continues its leadership position in space exploration. The FY 2013 budget request for Exploration is \$4,076.5 million (including \$143.7 million of exploration-related construction of facilities funding included in the Construction and Environmental Compliance and Restoration, or CECR account).

Activity within the Exploration account supports forward-looking development of systems and capabilities required for human exploration of space beyond low Earth orbit. This includes launch and crew vehicles for missions beyond low Earth orbit, developing affordable commercial means to provide crew access to the ISS, technologies and countermeasures to keep astronauts healthy and functional during deep space missions, and technologies to reduce launch mass and cost of deep space missions. In FY 2013, NASA will prepare for the first exploration flight test of the Orion Multi Purpose Crew Vehicle (Orion MPCV) scheduled for early 2014. Conducting this test before the Orion MPCV critical design review will reduce program cost and schedule risks by allowing actual flight data to influence the final design of critical spacecraft systems, thereby avoiding increased ground testing and costly redesign efforts. The Agency will also pursue Space Act Agreements with industry to support the next design and development phase of commercial crew transportation systems.

SPACE OPERATIONS LAYING THE FOUNDATIONS FOR EXPLORATION AND DISCOVERY

Space Operations focuses on enabling and safeguarding current human spaceflight activity in and beyond low Earth orbit. The FY 2013 budget request for Space Operations is \$4,109.1 million.

A mainstay of Space Operations work is managing the maintenance, operations, research portfolio, and resupply of ISS. Another essential element is providing secure and dependable space communications to ground stations. This work enables not just human exploration, but provides essential space communications networks for science instruments orbiting the Earth and exploring the solar system. In FY 2013, NASA will continue to train astronaut crews for the ISS, collaborate with the non-governmental organization selected for managing ISS research, and procure resupply services from the commercial rocket sector. The 21st Century Space Launch Complex (21CSLC) will move forward, from planning and concept validation studies to upgrading systems and equipment, implementing environmental protection

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

BUDGET HIGHLIGHTS

measures, and preparing capabilities to meet the needs of NASA and other potential customers. Vital space communications networks and links will be protected as NASA begins to upgrade the aging fleet of Tracking and Relay Data Satellites. Finally, close out activities for the Space Shuttle will continue, as the orbiters are made safe and prepared to move into their new roles at public science facilities across the United States.

EDUCATION BUILDS A FUTURE WORKFORCE

NASA's education programs share the excitement of the Agency's science and engineering missions with students, educators, and the public. The FY 2013 budget request for Education is \$100.0 million.

NASA attracts learners to pursue science, technology, engineering, and mathematics (STEM) study and careers by engaging them in the Agency's missions, by fostering collaborative relationships between learners and the current NASA workforce, and offering learners opportunities to work in Agency facilities. Hands-on challenges with NASA experts aim to generate interest in undergraduate STEM study and thereby increase the number of students who seek employment in aerospace or related STEM fields. In FY 2013, NASA's STEM education program will focus on competitive opportunities for learners and educators. Planned activities will serve middle school audiences; offer pre- and in-service educator professional development; provide experiential opportunities for high school and undergraduate students; and will align with the five-year multi-agency STEM education strategic plan forthcoming from the National Science and Technology Council's Committee on STEM Education.

EXCELLENCE IN OPERATIONS FOR MISSION SUCCESS

NASA's investment in Cross Agency Support and Construction and Environmental Compliance and Restoration accounts enable the Agency to conduct day-to-day technical and business operations. These organizations provide the workforce with the proper services, tools and equipment to complete essential tasks, protect and maintain the security and integrity of information and assets, and ensure that personnel work under safe and healthy conditions. The FY 2013 budget request for Cross Agency Support is \$2,847.5 million, and the request for Construction and Environmental Compliance and Restoration is \$619.2 million.

In FY 2013, NASA will continue to seek and implement additional operational efficiencies across the Agency. An aggressive savings campaign in support of the Administration's Campaign to Cut Waste enables the Agency to maximize its investments on mission priorities. Collaboration with other Federal agencies and industry optimizes use of capabilities that may exist outside of the Agency (e.g., thermal vacuum chambers), creating greater Government-wide efficiencies. NASA will increase its efforts to identify and avoid counterfeit parts, as sub-standard components can lead to costly loss of mission or even loss of life. NASA has also trimmed Center and Headquarters services to essentials, including facilities maintenance and repair, and IT services. Consolidation of service contracts will further reduce operating costs and leverage new systems and processes.

Construction and Environmental Compliance and Restoration will continue to manage the Agency's facilities with an eye on reducing infrastructure, implementing efficiency and high performance upgrades, and prioritizing repairs to achieve the greatest return on investment. In FY 2013 NASA continues to

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

BUDGET HIGHLIGHTS

consolidate facilities to achieve greater operational efficiency, notably combining arc jet testing activities at Ames Research Center and Johnson Space Center into one complete facility at Ames. NASA will decommission and continue preparations to dispose of property and equipment no longer needed for missions, including the mate/demate shuttle devices at Dryden Flight Research Facility and White Sands Testing Facility. The Agency will also complete interim soil clean up at the Santa Susana Field Laboratory, and publish environmental impact statements.

NOTES ON THE NASA BUDGET REQUEST

NASA'S WORKFORCE

NASA's workforce continues to be its greatest asset to enable its missions in space and on Earth. The Agency remains committed to applying this asset to benefit society; address contemporary environmental and social issues; lead or participate in emerging technology opportunities; collaborate and strengthen the capabilities of commercial partners both large and small; and communicate the challenges and results of Agency programs and activities. The civil service staffing levels proposed in the FY 2013 budget support NASA's scientists, engineers, researchers, managers, technicians, educators, and business operations workforce. It includes civil service personnel at all NASA Centers, Headquarters, and NASA-operated facilities. The mix of skills and distribution of workforce across the Agency is, however, necessarily changing.

NASA continues to adjust its workforce size and skills-mix to address changing mission priorities, a new emphasis on industry and academic partnerships, and a leaner fiscal environment. While a civil service workforce is critical for conducting mission-essential work in research and technology, some reduction to workforce levels is necessary in response to the leaner fiscal environment at the Agency. NASA will reduce the size of the civil service workforce by more than 250 full-time equivalents (FTE) from FY 2012 to FY 2013, stabilizing the workforce at just over 18,000 FTE. This decline addresses workforce at several Centers affected by changes in the human space flight portfolio and takes into account a hiring slowdown across most Centers in response to Agency budget reductions. It also reflects the planned end of a temporary FTE increase granted in FY 2010 and FY 2011 to encourage early career hiring at Centers.

The Agency will apply the valued civil service workforce to priority mission work, adjusting skill mix where appropriate. Centers will explore cross-mission retraining opportunities whenever possible, continue offering targeted buyouts in selected surplus skill areas, and continue to identify, recruit and retain employees who possess essential/critical skills and competencies.

A SINGLE HUMAN EXPLORATION AND OPERATIONS MISSION DIRECTORATE LEVERAGES KNOWLEDGE ABOUT HUMAN SPACEFLIGHT

In 2011, NASA created the Human Exploration and Operations Mission Directorate (HEOMD) through a merger of the Exploration Systems and Space Operations mission directorates. This new, integrated organization is uniquely equipped to implement NASA's human spaceflight goals to achieve a safe, reliable, and affordable program that will sustain human space exploration efforts over the long term. The new structure ensures that knowledge and lessons learned from Space Shuttle and ISS activities and contracted operations services are embedded within the Agency's forward-looking engineering design and exploration capabilities development. Creation of a single human spaceflight organization also provides the Agency with an integrated commercial transportation program for the ISS; simplified external relationships with industry and international partners; and streamlined internal efforts among NASA Centers for more efficient operations.

HEOMD manages both the Exploration and Space Operations budget accounts.

NOTES ON THE NASA BUDGET REQUEST

OPERATING EFFICIENTLY AND MAXIMIZING PROGRAMMATIC FUNDS

NASA is undertaking several initiatives to improve operational and administrative efficiencies. Highlighted below are several actions NASA plans to implement in FY 2013 to achieve targeted savings of at least \$200 million from FY 2010 levels. Savings in administrative and operational areas help offset potential reductions to NASA's science and engineering missions.

Continue compliance with Executive Order 13576, Delivering an Efficient, Effective and Accountable Government, and Executive Order 13589, Promoting Efficient Spending.

NASA has targeted savings through reductions to travel and relocation, printing, advisory services, and general supplies and materials. Examples of specific actions being taken to reduce FY 2013 costs include:

- Reducing instructor-led or other training with a high per participant cost. NASA will increase its use of Web-enabled opportunities and, peer-to-peer sharing of experiences;
- Reducing non-mission critical face-to-face travel, increasing use of video conferencing and Web-enabled technologies;
- Reducing color printing and copying;
- Centralizing and/ or consolidating procurement of items, such as supplies and materials;
- Increasing use of in-house advisory service capabilities in lieu of out-of-house capabilities, where and when delays are acceptable; and
- Reducing baseline service levels commensurate with funding (e.g., longer processing/response time, or less frequent occurrence, of certain services).

Purchase and management of IT devices.

In FY 2013, NASA is implementing several initiatives to reduce costs associated with IT devices, specifically:

- Consolidating and integrating individual Center local help desks and ordering systems through the Phase II Enterprise Service Desk activity;
- Encouraging the use of employee-owned personal computers enabling employees to bring in their personal computers instead of using Government-supplied equipment. This approach is made possible by allowing personal computers to securely access NASA services; and
- Implementing a telephone replacement using a mixed mode strategy based on the nature of work conducted by personnel. The mixed mode implementation allows replacement of desk phones with a VoIP implementation, use of cellular phones and smart phones, and cellular devices using institutional and wireless connection to the internet.

In addition to the savings initiatives listed above to achieve at least \$200 million in targeted activities/functions, NASA has implemented the following actions to achieve additional operational efficiencies:

Utility savings.

NASA is continuing to aggressively implement energy, water, and other utility cost savings in three ways:

- Improving efficiency. NASA is installing energy-efficient lighting, utilizing daylighting,

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

NOTES ON THE NASA BUDGET REQUEST

retrofitting HVAC systems, improving metering and control systems, and unplugging unneeded appliances and equipment;

- Consolidating energy-intensive operations. By re-configuring operations, NASA can reduce operations costs; and
- Renegotiating utility contracts. NASA has been working with utility and energy service suppliers to reduce the rates paid for utility services.

Right-sizing infrastructure.

The Agency continues to actively take steps towards right-sizing its infrastructure. This initiative has reduced the number of active facilities, resulting in operational savings.

During these times of constrained Federal budgets, NASA leadership fully understands and appreciates the need to reduce costs where appropriate. NASA is committed to continuing its efforts to promote efficient spending and reduce operating and overhead costs.

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

EXPLANATION OF BUDGET TABLES

NASA presents the FY 2013 budget request in full-cost, where all project costs are allocated to the project, including labor funding for the Agency's civil service workforce. Note that budget figures in tables may not add due to rounding.

OUTYEAR FUNDING ASSUMPTIONS

At this time, funding lines beyond FY 2013 should be considered notional. In general, NASA accounts are held at their FY 2013 request level, adjusted for the amounts transferred to the construction account in FY 2013.

NASA REQUESTS CONSTRUCTION OF FACILITIES IN ONE ACCOUNT

Per Congressional direction, NASA formulated the FY 2013 budget request to include programmatic construction of facilities (CoF) in the Construction and Environmental Compliance and Remediation (CECR) account. This eliminates the need for large-scale transfers of budget authority from the mission accounts to CECR during program execution. NASA cannot estimate planning for future CoF requirements in the notional outyears with certainty. Therefore, potential programmatic CoF requests for the outyears remain included in the mission, and not CECR accounts. Programmatic CoF requirements will be finalized annually, and CECR and mission budgets adjusted accordingly.

BUDGET TABLES ADJUSTED FOR COMPARABILITY

As requested by Congress in House Report 112-284, the FY 2011 actual and FY 2012 estimates have been adjusted to display their budgets in a presentation that is "comparable" to the content of items proposed in the FY 2013 budget. This presentation allows direct comparability of yearly budget data associated with an investment, regardless of the account (or theme, program, etc.) in which it was or is being executed in. When either FY 2011 actual or FY 2012 estimates have been adjusted to facilitate comparability, an explanatory note is provided under the budget table. In addition, detailed crosswalks of the non-comparable FY 2011 actual and FY 2012 estimates to their comparable amounts are provided in the Supporting Data section of this volume.

Some adjustments of note for comparable presentation include:

- The FY 2011 programs under the Office of the Chief Technologist (OCT), which included portions of the Exploration account's Exploration Technology Development program, Space Operations account's Space Technology program, and the Cross Agency Support account's Innovative Partnership Program are comparably displayed as consolidated under the Space Technology account. FY 2013 appropriations for the OCT's programs are proposed under the Space Technology account, consistent with its FY 2012 appropriation. Tables in the Space Technology chapter explain how each of the FY 2011 OCT programs are comparably displayed.
- In response to FY 2012 Congressional direction, the FY 2013 budget proposes Exploration Ground Systems as a new program title under the Exploration account. Activities proposed for EGS in the FY 2013 budget are comparable to exploration-related ground operations activities performed under the Exploration account's Space Launch Systems (SLS) and the Space

NASA FY 2013 BUDGET REQUEST EXECUTIVE SUMMARY

EXPLANATION OF BUDGET TABLES

Operations account 21CSLC programs during FY 2011 and FY 2012. In addition, the FY 2013 budget proposes to replace the Human Exploration Capabilities (HEC) theme in the Exploration account with an Exploration Systems Development (ESD) theme. ESD includes the Orion Multi-Purpose Crew Vehicle and Space Launch Systems program that compose HEC, and it also includes EGS that is related to the SLS and 21CSLC programs. Detailed explanations are provided in the Exploration chapter of this volume.

- Funding for JWST in FY 2013 funding is proposed under its own theme under the Science account, as was provided in FY 2012 by Congress. For comparability, JWST FY 2011 funding under the Astrophysics theme is now displayed under the JWST theme.

FY 2012 RESCISSION OF PRIOR YEAR APPROPRIATIONS

Section 528(f) under Title V of the Commerce, Justice, Science, and Related Agencies Appropriations Act, 2012 (Division B of Public Law 112-55), rescinded \$30 million in unobligated balances from NASA's prior year appropriations. As displayed in the H.R. 2112 Conference Report (House Report 112-284), the rescission of these prior year balances offset the \$17.80 billion provided in Title III of the Act to derive the NASA total FY 2012 appropriation of \$17.77 billion. NASA proposed distribution of the rescission amount across its accounts in its spending plan submitted to Congress on January 10, 2012. Consequently, the FY 2012 estimates in budget tables show amounts "net" of the rescission allocation proposed in the January 10, 2012 spending plan; furthermore, the amounts are adjusted for comparability. For example, the prior year funds that were allocated for institutional construction of facilities, no matter which account title they were rescinded from, are displayed against reductions against Institutional Construction of Facilities under the Construction and Environmental Compliance and Restoration account for comparability.